

WHAT IS CLAIMED IS:

1. A wireless communications system for transmitting and receiving a radio microphone signal carrying a voice signal indicative of voice information and a tone signal indicative of data information, comprising:

a wireless microphone transmission apparatus for transmitting said radio microphone signal carrying said voice signal indicative of voice information and said tone signal indicative of data information, said data information including a plurality of data types; and

a wireless receiving apparatus for receiving said radio microphone signal carrying said voice signal and said tone signal transmitted by said wireless microphone transmission apparatus;

said wireless microphone transmission apparatus including:

a voice inputting unit for inputting said voice information therethrough to generate said voice signal indicative of said voice information;

a data inputting unit for inputting said data information therethrough;

a data string generating unit for judging said data type of said data information inputted by said data inputting unit, determining a bit length of a data string in response to said data type, and generating said data string having said bit length on the basis of said data information inputted by said data inputting unit;

a tone signal generating unit for generating said tone signal indicative of said data information on the basis of said data string generated by said data string generating unit;

a mixing unit for mixing said voice signal generated by said voice inputting unit and said tone signal generated by said tone signal generating unit to generate a microphone signal carrying said voice signal and said tone signal;

a modulating unit for modulating said microphone signal carrying said voice signal and said tone signal generated by said mixing unit with a carrier signal to generate said radio microphone signal carrying said voice signal and said tone signal;

a transmission unit for transmitting said radio microphone signal carrying said voice signal indicative of said voice information and said tone signal indicative of said data information modulated by said modulating unit, therethrough, and

said wireless receiving apparatus including:

a receiving unit for receiving said radio microphone signal carrying said voice signal indicative of said voice information and said tone signal indicative of said data

information transmitted by said wireless microphone transmission apparatus;

a demodulating unit for demodulating said radio microphone signal carrying said voice information and said tone signal received by said receiving unit to generate said microphone signal;

a voice signal filtering unit for filtering said voice signal indicative of said voice information therethrough from said microphone signal generated by said demodulating unit;

a tone signal filtering unit for filtering said tone signal therethrough from said microphone signal generated by said demodulating unit;

a data information computing unit for computing said data information on the basis of said tone signal filtered through by said tone signal filtering unit;

a data information outputting unit for outputting said data information acquired by said data information computing unit, therethrough; and

a voice information outputting unit for outputting said voice information on the basis of said voice signal filtered through by said voice signal filtering unit, therethrough, in accordance with said data information outputted by said data information outputting unit.

2. A wireless communications system as set forth in claim 1, in which said data information includes operating state data indicative of an operating state of said wireless microphone transmission apparatus, and said wireless receiving apparatus has a display unit for displaying said data information transmitted by said wireless microphone transmission apparatus.

3. A wireless communications system as set forth in claim 1, in which said data information includes control data used for controlling said wireless receiving apparatus, and said wireless receiving apparatus further includes a control unit for controlling the operation of said wireless receiving apparatus on the basis of said control data.

4. A wireless communications system as set forth in claim 3, which further comprising additional one or more wireless receiving apparatuses, and said control unit of one of said wireless receiving apparatuses is operative to control the operation of the other one or more wireless receiving apparatuses on the basis of said control data.

5. A wireless communications system as set forth in claim 1 or claim 2, in which said data types include an urgent type and a large type, and said bit length of said data

string generated by said data string generating unit in response to said urgent type of data information is shorter than said bit length of said data string generated by said data string generating unit in response to said large type of information.

6. A wireless communications system as set forth in claim 5, in which said urgent type of data information includes sound level operation data, and said voice information outputting unit is operative to output said voice information therethrough on said sound level determined on the basis of said sound level operation data.

7. A wireless communications system as set forth in claim 5, in which said urgent type of data information includes control operation data.

8. A wireless communications system as set forth in claim 5, in which said large type of data information includes wireless microphone transmission apparatus information data.

9. A wireless communications system as set forth in claim 5, in which said large type of data information includes control operation data.

10. A wireless communications system as set forth in claim 7 or claim 9, in which said wireless receiving apparatus is electrically connectable with one or more external devices and said control operation data is used for controlling said external devices.

11. A wireless communications system as set forth in claim 8, in which said wireless microphone transmission apparatus information data includes a supply voltage level of said wireless microphone transmission apparatus.

12. A wireless microphone transmission apparatus for transmitting a radio microphone signal carrying a voice signal indicative of voice information and a tone signal indicative of data information comprising:

a voice inputting unit for inputting said voice information therethrough to generate said voice signal indicative of said voice information;

a data inputting unit for inputting said data information therethrough, said data information including a plurality of data types;

a data string generating unit for judging said data type of said data information inputted by said data inputting unit, determining a bit length of a data string in response

to said data type, and generating said data string having said bit length on the basis of said data information inputted by said data inputting unit;

a tone signal generating unit for generating said tone signal indicative of said data information on the basis of said data string generated by said data string generating unit;

a mixing unit for mixing said voice signal generated by said voice inputting unit and said tone signal generated by said tone signal generating unit to generate a microphone signal carrying said voice signal and said tone signal;

a modulating unit for modulating said microphone signal carrying said voice signal and said tone signal generated by said mixing unit with a carrier signal to generate said radio microphone signal carrying said voice signal and said tone signal; and

a transmission unit for transmitting said radio microphone signal carrying said voice signal indicative of said voice information and said tone signal indicative of said data information modulated by said modulating unit, therethrough.

13. A wireless microphone transmission apparatus as set forth in claim 12, in which said data information includes operating state data indicative of an operating state of said wireless microphone transmission apparatus, and further includes a display unit for displaying said data information.

14. A wireless microphone transmission apparatus as set forth in claim 12, in which said wireless microphone transmission apparatus information data includes a supply voltage level of said wireless microphone transmission apparatus.

15. A wireless microphone transmission apparatus as set forth in claim 12, in which said data types include an urgent type and a large type, and said bit length of said data string generated by said data string generating unit in response to said urgent type of data information is shorter than said bit length of said data string generated by said data string generating unit in response to said large type of information.

16. A wireless microphone transmission apparatus as set forth in claim 15, in which said urgent type of data information includes control operation data.

17. A wireless microphone transmission apparatus as set forth in claim 15, in which said large type of data information includes wireless microphone transmission

apparatus information data.

18. A wireless microphone transmission apparatus as set forth in claim 15, in which said large type of data information includes control operation data.

19. A wireless microphone transmission apparatus as set forth in claim 15, in which said urgent type of data information includes sound level operation data, and said voice information outputting unit is operative to output said voice information therethrough on said sound level determined on the basis of said sound level operation data.

20. A wireless receiving apparatus for receiving a radio microphone signal carrying a voice signal indicative of voice information and a tone signal indicative of data information comprising;

a demodulating unit for demodulating said radio microphone signal carrying said voice information and said tone signal received by said receiving unit to generate said microphone signal;

a voice signal filtering unit for filtering said voice signal indicative of said voice information therethrough from said microphone signal generated by said demodulating unit;

a tone signal filtering unit for filtering said tone signal therethrough from said microphone signal generated by said demodulating unit;

a data information computing unit for computing said data information on the basis of said tone signal filtered through by said tone signal filtering unit;

a data information outputting unit for outputting said data information acquired by said data information computing unit, therethrough; and

a voice information outputting unit for outputting said voice information on the basis of said voice signal filtered through by said voice signal filtering unit, therethrough, in accordance with said data information outputted by said data information outputting unit.

21. A wireless receiving apparatus as set forth in claim 20, in which said data information includes control data used for controlling said wireless receiving apparatus, which further includes a control unit for controlling the operation of said wireless receiving apparatus on the basis of said control data.

22. A wireless receiving apparatus as set forth in claim 20, in which said control operation data is used for controlling one or more external devices, and said data information outputting unit is capable of being electrically connected with said external devices.